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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/508,377	06/09/2000	ZHONGYI LI	054270/0126	7408

7590

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STEPHEN A BENT
FOLEY & LARDNER
WASHINGTON HARBOUR
3000 K STREET NW SUITE 500
WASHINGTON, DC 20007-5109

EXAMINER

FOX, DAVID T

ART UNIT

PAPER NUMBER

1638

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12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/508,317

Applicant(s)

Li et al

Examiner

Fox

Group Art Unit

1638

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 2/19/02
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 23-47 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☐ Claim(s) _____ is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☒ Claim(s) 23-47 are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
 - ☐ received in Application No. (Series Code/Serial Number) _____
 - ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

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Claims 1-22 have been cancelled per the preliminary amendment of 9 June 2000. Claims 53-77 submitted with the preliminary amendment of 9 June 2000 have been renumbered as claims 23-47 in accordance with 37 CFR 1.126, since there were no claims 23-47 previously in the application. Claim numbers embedded within dependent claims were also renumbered.

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in response to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 23-29, 39, 41-43 and 45, drawn to nucleic acid sequences encoding starch branching I enzyme, methods of their use to transform plants, and the resultant transformed plants.

Group II, claim(s) 23-27, 30-31, drawn to nucleic acid sequences encoding starch branching II enzyme.

Group III, claim(s) 23-27, 32-35, drawn to nucleic acid sequences encoding soluble starch synthase.

Group IV, claim(s) 23-27, 36-37, drawn to nucleic acid sequences encoding debranching enzyme.

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Group V, claim(s) 38, 40 and 46, drawn to nucleic acid sequences comprising a promoter isolated from a gene encoding a starch biosynthetic enzyme, operably linked to a heterologous coding sequence, and plants transformed therewith.

Group VI, claim(s) 44, drawn to a method of identifying variations in the introns of starch synthesis genes.

Group VII, claim(s) 47, drawn to a food product.

Claims 23-27 will be examined to the extent that they read on the elected invention.

The inventions listed as Groups I-VII do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The claims are not drawn to a single special technical feature because they are drawn to a multitude of nucleic acid sequences encoding a multitude of structurally and biochemically divergent enzymes with divergent amino acid sequences, and wherein a multitude of sequences with as low as 70% similarity to a particular sequence are also claimed.

The claims are not drawn to a special technical feature because they do not constitute an advance over the prior art. Group II, a nucleic acid sequence encoding a starch branching enzyme II without a particular amino-terminal sequence, is taught by Nair et al (see, e.g., page 157, Figure 2 and page 158, Figure 3, where a gene encoding wheat SBEII is taught), Fisher et al (maize SBEII gene) and Mizuno et al (see, e.g., page 19088, Figure 3, where a gene encoding rice SBEII

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[as characterized by Nair et al, page 159, column 1, first full paragraph and page 163, footnote 8] is taught).

Applicants are reminded that nucleotide sequences encoding different proteins are structurally distinct chemical compounds and are unrelated to one another. These sequences are thus deemed to normally constitute **independent and distinct** inventions within the meaning of 35 U.S.C. 121. Absent evidence to the contrary, each such nucleotide sequence is presumed to represent an independent and distinct invention, subject to a restriction requirement pursuant to 35 U.S.C. 121 and 37 CFR 1.141 et seq. This requirement is not to be construed as a requirement for an election of species, since each nucleotide and amino acid sequence is not a member of single genus of invention, but constitutes an independent and patentably distinct invention.

Inventions I-VII are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different modes of operation and different functions.

The inventions of Groups I-IV require isolated starch enzyme coding sequences not required by any other group. The inventions of each of Groups I-IV, drawn to first through fourth products, respectively, and a method of using the first product, require genes encoding different starch synthesis enzymes with different substrates and kinetic properties, each not required by the other. The invention of Group V, drawn to a fifth product, requires particular isolated tissue-specific promoters and non-starch enzyme coding sequences, and methods for

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assaying tissue-specific gene expression, each not required by any other group. The invention of Group VI, drawn to a second method, requires methods of sequencing or assaying nucleic acid sequences and non-coding introns, each not required by any other group. The invention of Group VII, drawn to a sixth product, involves food processing reagents and processes each not required by any other group.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter and fields of search, restriction for examination purposes as indicated is proper.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David T. Fox whose telephone number is (703) 308-0280. The examiner can normally be reached on Monday through Friday from 10:30AM to 7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson, can be reached on (703) 306-3218. The fax phone number for this Group is (703) 872-9306. The after final fax phone number is (703) 872-9307.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

March 18, 2002

DAVID T. FOX
PRIMARY EXAMINER
GROUP ~~180~~ 1638

A handwritten signature in cursive script, appearing to read "David T. Fox", written in black ink.